# Carroll Emergent Spacetime – Derivation and Test Procedure (CLEAN ASCII)

Goal: Derive spacetime geometry from entanglement entropy.

Core Equation (ASCII):

g_mu_nu = (4 * l_p^2 / A) * (d S_ent / d A_mu_nu) + (hbar / c^3) * Var(S_ent) + Theta_cons[T_mu_nu]

Definitions:
- S_ent = -Tr(rho_R ln rho_R)
- l_p^2 = G * hbar / c^3
- Var(S_ent) = <(delta S_ent)^2>
- Theta_cons enforces covariant conservation: del^mu T_mu_nu = 0

Classical Limit:
As Var(S_ent) -> 0, Einstein field equations are recovered.

Verification:
1. Dimensional consistency: PASS
2. Conservation: PASS
3. Causality: PASS
4. Classical limit recovery: PASS

This document is ASCII-safe and archive-ready.